

Overview

Aruba 303H Series Unified Hospitality Access Points

High-performance 802.11ac Wave 2 access point for hospitality and branch Offices

Product overview

The multi-functional Wave 2 303H access point delivers best-in class Wi-Fi connectivity for hospitality and branch offices, enabling an always-on user experience with low Total Cost of Ownership (TCO).

With a maximum concurrent data rate of 867Mbps in the 5GHz band and 300Mbps in the 2.4GHz band, the Aruba 303H Unified Hospitality Access Point delivers high-performance Gigabit Wi-Fi for hospitality and branch environments at an attractive price point. It supports multi-user MIMO (MU-MIMO) and 2 spatial streams (2SS) to provide simultaneous data transmission for up to 2 devices, maximizing data throughput and improving network efficiency.

The 303H AP can be easily mounted to a standard data wall-box using the existing structured cabling system or converted to a desk mounted AP using an optional mounting kit. It is ideal for schools (dormitories, classrooms), hotels, medical clinics, branch offices and remote workstations which often require flexible and easy deployment options.

The IEEE 802.11ac Wave 2 303H AP combines wireless and wired access in a single compact device. Three local Gigabit Ethernet ports are available to securely attach wired devices to your network. One of these ports is also capable of supplying PoE power to the attached device.

Like all other Aruba Wave 2 APs, the 303H AP includes the enhanced ClientMatch™ technology that extends the client steering technology with MU-MIMO client awareness. It automatically identifies MU-MIMO capable mobile devices and steers those devices to the closest MU-MIMO capable Aruba access point to achieve the best WLAN performance in a mixed device environment during the technology transition period.

The integrated Bluetooth Aruba Beacon in the 303H AP simplifies the remote management of a large scale network of battery-powered BLE Aruba Beacons while also providing advanced location and indoor wayfinding, and proximity-based push notification capabilities.

Features and Benefits

Unique Benefits

- **Two devices in one**
 - The 303H ships with everything you need to deploy as a wall-mounted (hospitality) AP, attaching directly to a standard single-gang data wall-box. The 303H can also be easily converted to a desk mounted (remote) AP, using an optional accessory stand.
 - On the 303HR units, this stand is already pre-assembled and attached to the AP (and these bundles contain a power adapter and cord as well).
- **Unified AP - deploy with or without controller**
 - The 303H can be deployed in either controller-based (ArubaOS) or controller-less (InstantOS) deployment mode.
- **Dual Radio 802.11ac access point with Multi-User MIMO (Wave 2)**
 - Supports up to 867Mbps in the 5GHz band (with 2SS/VHT80 clients) and up to 300Mbps in the 2.4 GHz band (with 2SS/HT40 clients).
- **Built-in Bluetooth Low-Energy (BLE) radio**
 - Enables location-based services with BLE-enabled mobile devices receiving signals from multiple Aruba Beacons at the same time.

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- Enables management of your deployment of battery-powered Aruba Beacons.
- **Advanced Cellular Coexistence (ACC)**
 - Minimizes the impact from out-of-band interference from sources such as 3G/4G cellular networks.
- **Intelligent Power Monitoring (IPM):**
 - Enables the AP to continuously monitor and report its actual power consumption and optionally make autonomous decisions to prioritize capabilities when power budget is limited.
 - For the 303H, the IPM power-save feature applies when the unit is powered by an 802.3af or 802.3at POE source. By default, the USB interface will be the first feature to be turned off by IPM if the AP power consumption would otherwise exceed the available power budget. Specific power-saving options are programmable with IPM.
- **RF Management**
 - Adaptive Radio Management (ARM) technology automatically assigns channel and power settings, provides airtime fairness and ensures that APs stay clear of all sources of RF interference to deliver reliable, high-performance WLANs
 - The 303H can be configured to provide part-time or dedicated air monitoring for spectrum analysis and wireless intrusion protection, VPN tunnels to extend remote locations to corporate resources, and wireless mesh connections where Ethernet drops are not available.
- **Security**
 - Integrated wireless intrusion protection offers threat protection and mitigation, and eliminates the need for separate RF sensors and security appliances.
 - IP reputation and security services identify, classify, and block malicious files, URLs and IPs, providing comprehensive protection against advanced online threats.
 - Integrated Trusted Platform Module (TPM) for secure storage of credentials, certificates and keys.
- **Intelligent app visibility and control**
 - AppRF technology leverages deep packet inspection to classify and block, prioritize, or limit bandwidth for thousands of applications in a range of categories.
- **Quality of service for unified communication apps**
 - Supports priority handling and policy enforcement for unified communication apps, including Microsoft Skype for Business with encrypted videoconferencing, voice, chat and desktop sharing.
- **Simple and easy deployment**
 - The AP-303H comes with a Remote AP Bundle SKU that contains an access point, desk stand, power adapter and AC power cord. The bundled items are orderable as a single SKU and shipped in one shipping box, allowing remote workers to quickly set up the AP without requiring AP/mount assembly.

Choose Your Operating Mode

Aruba Unified APs offer a choice of deployment and operating modes to meet your unique management and deployment requirements:

- The 303H AP is a unified AP that supports both controller-based and controller-less deployment modes, providing maximum flexibility
- Controller-based mode: When deployed in conjunction with an Aruba Mobility Controller, Aruba APs offer centralized configuration, data encryption, policy enforcement and network services, as well as distributed and centralized traffic forwarding.
- Controller-less (Instant) mode: The controller function is virtualized in a cluster of APs in Instant mode. As the network grows and/or requirements change, Instant deployments can easily migrate to controller-based mode.
- Remote AP (RAP) mode for branch deployments
- Air monitor (AM) for wireless IDS, rogue detection and containment
- Spectrum analyzer, dedicated or hybrid, for identifying sources of RF interference
- Secure enterprise mesh

For large installations across multiple sites, the Aruba Activate service significantly reduces deployment time by automating device provisioning, firmware upgrades, and inventory management. With Aruba Activate, APs in Instant mode can configure themselves when powered up.

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303H Access Point Specifications

- Unified dual-radio 802.11ac Wave 2 2x2:2 hospitality and branch AP with internal antennas, three local Gigabit Ethernet ports, PoE out and USB host interface
- Supports wall-box and desk mount deployments

WiFi Radio Specifications

- AP type: Indoor, dual radio, 5GHz 802.11ac 2x2 MIMO and 2.4GHz 802.11n 2x2 MIMO1
- Software-configurable dual radio supports 5GHz (Radio 0) and 2.4GHz (Radio 1)
- 5GHz: Two spatial stream Multi User (MU) MIMO for up to 867Mbps wireless data rate to up to two (1x1 VHT80) MU-MIMO capable client devices simultaneously
- 5GHz: Two spatial stream Single User (SU) MIMO for up to 867Mbps wireless data rate to individual 2x2 VHT80 client devices
- 2.4GHz: Two spatial stream Single User (SU) MIMO for up to 300Mbps wireless data rate to individual 2x2 HT40 client devices
- Support for up to 255 associated client devices per radio, and up to 16 BSSIDs per radio
- Supported frequency bands (country-specific restrictions apply):
 - 2.400 to 2.4835GHz
 - 5.150 to 5.250GHz
 - 5.250 to 5.350GHz
 - 5.470 to 5.725GHz
 - 5.725 to 5.850GHz
- Available channels: Dependent on configured regulatory domain
- Dynamic frequency selection (DFS) optimizes the use of available RF spectrum
- Supported radio technologies:
 - 802.11b: Direct-sequence spread-spectrum (DSSS)
 - 802.11a/g/n/ac: Orthogonal frequency-division multiplexing (OFDM)
- Supported modulation types:
 - 802.11b: BPSK, QPSK, CCK
 - 802.11a/g/n/ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM
- Transmit power: Configurable in increments of 0.5 dBm
- Maximum (conducted) transmit power (limited by local regulatory requirements):
 - 2.4GHz band: +18 dBm per chain, +21 dBm aggregate (2x2)
 - 5GHz band: +18 dBm per chain, +21 dBm aggregate (2x2)
 - **NOTE:** conducted transmit power levels exclude antenna gain. For total (EIRP) transmit power, add antenna gain
- Advanced Cellular Coexistence (ACC) minimizes interference from cellular networks
- Maximum ratio combining (MRC) for improved receiver performance
- Cyclic delay/shift diversity (CDD/CSD) for improved downlink RF performance
- Short guard interval for 20MHz, 40MHz and 80MHz channels
- Space-time block coding (STBC) for increased range and improved reception
- Low-density parity check (LDPC) for high-efficiency error correction and increased throughput
- Transmit beam-forming (TxBF) for increased signal reliability and range
- Supported data rates (Mbps):
 - 802.11b: 1, 2, 5.5, 11
 - 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54
 - 802.11n (2.4GHz): 6.5 to 300 (MCS0 to MCS15)
 - 802.11n (5GHz): 6.5 to 450 (MCS0 to MCS23)
 - 802.11ac: 6.5 to 867 (MCS0 to MCS9, NSS = 1 to 2 for VHT20/40/80)
- 802.11n high-throughput (HT) support: HT 20/40
- 802.11ac very high throughput (VHT) support: VHT 20/40/80

¹ 256-QAM modulation (802.11ac) supported by the 2.4GHz radio as well

Overview

- 802.11n/ac packet aggregation: A-MPDU, A-MSDU

WiFi Antennas

- Two integrated dual-band moderately directional antennas for 2x2 MIMO with maximum individual antenna gain of 4.2dBi in 2.4GHz and 5.6dBi in 5GHz. Built-in antennas are optimized for vertical orientation of the AP.
- The horizontal beamwidth is roughly 120 degrees.
Combining the patterns of each of the antennas of the MIMO radios, the peak gain of the effective per-antenna pattern is 3.4dBi in 2.4GHz and 4.5dBi in 5GHz.

Other Interfaces

- Uplink: 10/100/1000BASE-T Ethernet (RJ-45, back)
 - Auto-sensing link speed and MDI/MDX
 - 802.3az Energy Efficient Ethernet (EEE)
 - PoE-PD (input): 48 Vdc (nominal) 802.3af/at PoE
- Local: Three 10/100/1000BASE-T Ethernet (RJ-45, bottom)
 - Auto-sensing link speed and MDI/MDX
 - 802.3az Energy Efficient Ethernet (EEE)
 - One port: PoE-PSE (output): 48 Vdc (nominal) 802.3af PoE
- Passive pass-through interface (two RJ-45, back and bottom)
 - Bluetooth Low Energy (BLE) radio
 - Up to 4dBm transmit power (class 2) and -93dBm receive sensitivity
 - Integrated antenna with moderately directional pattern and peak gain of 0.9dBi
- USB 2.0 host interface (Type A connector)
 - 3G/4G cellular modems
 - Device battery charging port
 - Capable of supplying up to 1A/5 watts of power to an attached device
- DC power interface, accepts 1.35/3.5-mm center-positive circular plug with 9.5-mm length
- Visual indicators (LEDs):
 - Power/system status
 - Radio status
 - PoE-PSE status
 - Local network port status (3x)
- Reset/LED control button ("paperclip access")
 - Factory reset (when activated during device power up)
 - LED control: toggle off/normal
 - Serial console interface (custom, uUSB physical jack)

Encrypted Throughput

- Maximum IPsec encrypted wired throughput: 100Mbps

Power Sources and Consumption

- The AP supports direct DC power and Power over Ethernet (PoE)
- When both power sources are available, DC power takes priority over PoE
- Power sources are sold separately
- Direct DC power source: 48Vdc nominal, +/- 5%
- Power over Ethernet (PoE): 48 Vdc (nominal) 802.3af/802.3at compliant source
 - Unrestricted functionality with direct DC power. When using an 802.3af PoE source, the PoE out (PSE) capability of the 303H is always disabled.

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- Without IPM, both the USB port and PoE out (PSE) capability are disabled when the AP is powered by an 802.3af PoE source, and either the USB port or the PoE out (PSE) capability is disabled when powered by an 802.3at PoE source (PSE capability is disabled by default).
- When using IPM, the AP may enter power-save mode with reduced functionality when powered by a PoE source (see details on Intelligent Power Monitoring elsewhere in this datasheet)
- Maximum (worst-case) power consumption: 9.7W
 - Excludes power consumed by external USB and/or PoE-PD device (and internal losses); this could add up to 6.1W (PoE) for a 5W/1A USB device and up to 15.6W for a max load (15.4W) 802.3af PoE-PD device
 - Maximum (worst-case) power consumption in idle mode: 4.9W (PoE) or 4.8W (DC)

Mounting

- The AP ships with a mounting plate to attach the AP to a single-gang wall-box (most international variations covered). A security screw (T8H) is provided to ensure that the AP cannot (easily) be removed from its mount without a specialized tool.
- Several optional mount kits are available to attach the AP to a dual-gang wall-box, directly to the wall, or to support desk mounting.
- In the 303HR bundles the 303H AP ships with a pre-assembled and installed desk mount, a power adapter and an AC power cord.

Mechanical

- AP303-H
 - Dimensions/weight (unit, including single-gang wall box mount plate):
 - 86mm (W) x 40mm (D) x 150mm (H)
 - 350g
 - Dimensions/weight (shipping):
 - 128mm (W) x 63mm (D) x 168mm (H)
 - 470g
- AP303-HR
 - Dimensions/weight (unit, including single-gang wall box mount plate):
 - 86mm (W) x 40mm (D) x 150mm(H)
 - 430g
 - Dimensions/weight (shipping):
 - 293mm (W) x 137mm (D) x 93mm (H)
 - 790g

Environmental

- Operating:
 - Temperature: 0° C to +40° C (+32° F to +104° F)
 - Humidity: 5% to 93% non-condensing
- Storage and transportation:
 - Temperature: -40° C to +70° C (-40° F to +158° F)

Regulatory

- FCC/Industry of Canada
- CE Marked
- R&TTE Directive 1995/5/EC
- Low Voltage Directive 72/23/EEC
- EN 300 328
- EN 301 489

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- EN 301 893
- UL/IEC/EN 60950
- EN 60601-1-1 and EN 60601-1-2

For more country-specific regulatory information and approvals, please see your Aruba representative.

Reliability

- MTBF: 1,090,000 hours (124 years) at +25C operating temperature

Regulatory Model Numbers

- AP-303H-xx (all variants): APINH303

Certifications

- CB Scheme Safety, cTUVus
- UL2043 plenum rating
- Wi-Fi Alliance (WFA) certified 802.11a/b/g/n/ac

Warranty

- **Aruba Limited lifetime warranty**

Minimum Software Versions

- ArubaOS™: 6.5.2.0/8.2.0.0
 - InstantOS™: 6.5.2.0/8.2.0.0
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Configuration

Ordering Information

Step 1: Select AP model

Description	Part number	Comment
Aruba AP-303H (RW) Dual-radio 802.11ac 2x2 Unified Hospitality AP with Internal Antennas	JY678A	Add POE or DC power source
Aruba AP-303H (RW) FIPS/TAA Dual-radio 802.11ac 2x2 Unified Hospitality AP with Internal Antennas	JY679A	Add POE or DC power source
Aruba AP-303H (US) Dual-radio 802.11ac 2x2 Unified Hospitality AP with Internal Antennas	JY680A	Add POE or DC power source
Aruba AP-303H (US) FIPS/TAA Dual-radio 802.11ac 2x2 Unified Hospitality AP with Internal Antennas	JY681A	Add POE or DC power source
Aruba AP-303H (JP) Dual-radio 802.11ac 2x2 Unified Hospitality AP with Internal Antennas	JY682A	Add POE or DC power source
Aruba AP-303H (JP) FIPS/TAA Dual-radio 802.11ac 2x2 Unified Hospitality AP with Internal Antennas	JY683A	Add POE or DC power source
Aruba AP-303H (IL) Dual-radio 802.11ac 2x2 Unified Hospitality AP with Internal Antennas	JY684A	Add POE or DC power source
Aruba AP-303H (IL) FIPS/TAA Dual-radio 802.11ac 2x2 Unified Hospitality AP with Internal Antennas	JY685A	Add POE or DC power source
Aruba AP-303H (EG) Dual-radio 802.11ac 2x2 Unified Hospitality AP with Internal Antennas	JY862A	Add POE or DC power source
Aruba AP-303H (EG) FIPS/TAA Dual-radio 802.11ac 2x2 Unified Hospitality AP with Internal Antennas	JY863A	Add POE or DC power source
Aruba AP-303HR (EU) 802.11ac Dual 2x2:2 Radio Remote AP Bundle	JZ087A	Includes AP, desk stand, power adapter and European AC power cord (Europlug)
Aruba AP-303HR (US) 802.11ac Dual 2x2:2 Radio Remote AP Bundle	JZ088A	Includes AP, desk stand, power adapter and North America AC power cord

NOTE: All models ship with a single gang wall-box mount bracket in the box.

Step 2: Add powering accessories (optional)

Description	Part number	Comment
PD-3501G-AC POE midspan injector, 10/100/1000 802.3af (15.4W)	JW627A	Add AC power cord AP will operate in restricted (power-save) mode with this injector
PD-9001GR-AC POE midspan injector, 10/100/1000 802.3at (30W)	JW629A	Add AC power cord
AP-AC-48V36C AC-to-DC Power Adapter (48V/36W)	JX991A	Add AC power cord

Add 3-prong (C13) AC power cord for POE injector or AC adapter:

PC-AC-ARG Argentina AC power cord (C13, 2m)	JW113A
PC-AC-AUS Australia AC power cord (C13, 2m)	JW114A
PC-AC-BR Brazil AC power cord (C13, 2m)	JW115A
PC-AC-CHN China AC power cord (C13, 2m)	JW116A
PC-AC-DEN Denmark AC power cord (C13, 2m)	JW117A
PC-AC-EC Europe AC power cord (C13, 2m)	JW118A

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PC-AC-IN India AC power cord (C13, 2m)	JW119A
PC-AC-IL Israel AC power cord (C13, 2m)	JW120A
PC-AC-IT Italy AC power cord (C13, 2m)	JW121A
PC-AC-JPN Japan AC power cord (C13, 2m)	JW122A
PC-AC-KOR Korea AC power cord (C13, 2m)	JW123A
PC-AC-NA North America AC power cord (C13, 2m)	JW124A
PC-AC-SWI Switzerland AC power cord (C13, 2m)	JW125A
PC-AC-TW Taiwan AC power cord (C13, 2m)	JW126A
PC-AC-UK United Kingdom AC power cord (C13, 2m)	JW127A
PC-AC-ZA South Africa AC power cord (C13, 2m)	JW128A

Step 3: Add mount accessories (optional)

Description	Part number	Comment
AP-303H-MNT1 Kit with Spare Single-gang Wall-box Mount Adapter for 303H Series AP	JY686A	Spare for what ships with AP
AP-303H-MNT2 Kit with Optional Dual-gang Wall-box Mount Adapter for 303H Series AP	JY687A	
AP-303H-MNTD Kit with Optional Desk Mount Adapter for 303H Series AP	JY689A	
AP-303H-MNTW Kit with Optional Wall Mount Adapter for 303H Series AP	JY688A	

Step 4: Add cosmetic snap-on cover (optional)

Description	Part number	Comment
AP-303H-CVR-20 20-pk for AP-303H with Holes for LED Indicators White Non-glossy Snap-on Covers	JY973A	

Step 5: Add other accessories (optional)

Description	Part number	Comment
AP-CBL-SERU Micro-USB TTL3.3V to USB2.0 AP Console Adapter Cable	JY728A	Custom console port adapter

Technical Specifications

WI-FI RF Performance Table		
	Maximum transmit power (dBm) per transmit chain	Receiver sensitivity (dBm) per receive chain
802.11b 2.4GHz		
1Mbps	18.0	-96.0
11Mbps	18.0	-88.0
802.11g 2.4GHz		
6Mbps	18.0	-91.0
54Mbps	16.0	-74.0
802.11n HT20 2.4GHz		
MCS0/8	18.0	-90.0
MCS7/15	14.0	-71.0
802.11n HT40 2.4GHz		
MCS0/8	18.0	-87.0
MCS7/15	14.0	-69.0
802.11a 5GHz		
6Mbps	18.0	-90.0
54Mbps	16.0	-73.0
802.11n HT20 5GHz		
MCS0/8	18.0	-90.0
MCS7/15	14.0	-71.0
802.11n HT40 5GHz		
MCS0/8	18.0	-87.0
MCS7/15	14.0	-68.0
802.11ac VHT20 5GHz		
MCS0	18.0	-90.0
MCS8	13.0	-67.0
802.11ac VHT40 5GHz		
MCS0	18.0	-87.0
MCS9	12.0	-62.0
802.11ac VHT80 5GHz		
MCS0	18.0	-84.0
MCS9	12.0	-59.0

NOTE: Table shows the maximum capability of the hardware provided (excluding antenna gain). Maximum transmit power is limited by local regulatory settings.

Summary of Changes

Date	Version History	Action	Description of Change
18-Dec-2017	From Version 5 to 6	Changed	Minor changes made on Features and Benefits
23-Oct-2017	From Version 4 to 5	Changed	Features and Benefits updated
27-Jun-2017	From Version 3 to 4	Changed	Features and Benefits updated
05-Jun-2017	From Version 2 to 3	Added	Models added: JZ087A, JZ088A
13-Feb-2017	From Version 1 to 2	Changed	Updates made on Configuration section
06-Feb-2017	Version 1	Created	Document creation.



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